

Thompson, Manitoba Site Descriptions

This file describes the location of each site sampled by USGS for the FIRES-ExB project. These sites are located west and northwest of Thompson, Manitoba, along Highway 391. The following text gives general directions to each of our sites, assuming one was driving west from Thompson to Leaf Rapids. Included are directions to the 1995 moderately well- and somewhat poorly-drained sites, which had soil profiles described but not sampled.

In general sampling locations for each site were set along two transects, which are arranged in an 'L' formation. The boundaries of these L's were often marked with pink/black flagging. Every 20 m along the 'L' were 60 cm² plots (some marked out with string), called moss plots. The majority of organic and soil descriptions and samples occur at these locations. Woody debris transects (data not included in this report) were located inside the 'L' and were marked using pigtailed (rods with curly ends).

Listed along with directions to each site are GPS coordinates, azimuth of each transect within the L, a general description of each soil sampling location, and any modifications to sampling design. All GPS points listed below are using UTM coordinates and were taken using or convert to the WGS-84 datum. Site names are followed by year of burning.

OBSD (1850)

Park at dirt area on left side of Highway 391 ~43.5 km from the road to the airport. Follow the trail into the power line. Turn left along the power line to first road on right. Follow this road past generators to staging area. Start to walk along the boardwalk towards the tower. Just after the portable building on the right is a trail marked with pink/black flagging. This path will take you to

the juncture of the L (6192605 N, 532264 E). Transects were set along 180° and 270°. Moss plots were located every 20 m along the south and west transects from 20 - 120 m.

- OBSG - Sampled September 2002 by Jennifer Harden. Located between the Eddy Jr. tower and canopy access tower, with the trail to our OBSD L on the right. Instrumented pit.
Approximate location: 6192541 N, 532282 E. Originally called OBSG.
- OBSD 0S – Sampled July 20, 2003 by Claudia Zimczik. Located at the junction of the two transects (no moss plot). Original name TOBS 0.
- OBSD 20S – Sampled July 20, 2003 by Claudia Zimczik. Located at the moss plot at 20 m S. Original name TOBS 20 S.
- OBSD 40S - Sampled July 20, 2003 by Claudia Zimczik. Located at the moss plot at 40 m S. Original name TOBS 40 S.
- OBSD 60 S - Sampled July 20, 2003 by Claudia Zimczik. Located at the moss plot at 60 m S. Original name TOBS 60 S.
- OBSD 80S - Sampled July 20, 2003 by Claudia Zimczik. Located at the moss plot at 80 m S. Original name TOBS 80 S.

OBSW (1850)

Park at dirt area on left side of Highway 391 ~43.5 km from the road to the airport. Follow the trail into the power line. Turn left along the power line to first road on right. Follow this road past generators to staging area. The somewhat poorly drained site (OBSW) is most easily accessed from the platform staging area. Pink flagging at approximately 240° marks a trail from the end of this platform to the Gower/Univ. of Wisconsin (UW) sites and our OBSW site. The juncture of the L (6192984 N, 532522 E) is located along the left side of this path, near the #25 UW stake. You

may also access the OBSW L by following the trail to OBSD, in which you walk along boardwalk towards the tower. Just after the portable building on the right is a trail marked with pink/black flagging. Off this trail to the right you should be able to spot the pin at 200 m W (no moss plot). Following this transect to the east(ish) will get you to the juncture of the L. The west transect for this site is 200 m long at ~230-240°. The north transect for this site is 60 m long at ~300-320°. Moss plots are located every 20 m along the north transect from 20 – 60 m and along the west transect from 20- 180 m.

- OBSW 20N - Sampled September 15, 2004 by Jennifer Harden and Lee Pruett. Located 20 m along the north transect. From side of a *Sphagnum fuscum* hummock. Approximate location: 6193000 N, 532508 E.
- OBSW 20W - Sampled September 15, 2004 by Jennifer Harden and Lee Pruett. Located 20 m along the west transect. Within a hollow. Approximate location: 6192977 N, 532500 E.
- OBSW 80W - Sampled September 15, 2004 by Jennifer Harden and Lee Pruett. Located 80 m along the west transect. Within a flat area (lawn). Approximate location: 6192942 N, 532454 E.
- OBSW 120W - Sampled September 15, 2004 by Jennifer Harden and Lee Pruett. Located 120 m along the west transect. Within a hollow. Approximate location: 6192923 N, 532420 E.

T30D (1930)

Drive ~45 km past the road to the airport to 6196233 N, 529651 E – the road will be curving off to the left. The trail to the site starts at the top of the hill, inside the grassy area, on the left (south) side of the road. It is well defined within the trees. Trail flagging changes from pink/black to orange within 200 m of where the tower was located. The trail to the dry site stays to the right

after you pass the solar panels (6195679 N, 529705 E) and is marked with pink flagging. The junction of the L is located at 6195731 N, 529687 E. The west transect for this site is 180 m long at ~220-240°. Trails to Agriculture Canada site's are located on both sides of this transect, mostly to the south. The north transect for this site is 100 m long at ~305-320°. Moss plots are located every 20 m along each transect.

- T30D 1 - Sampled September 13, 2002 by Jennifer Harden and Sue Trumbore. Instrumented pit. In black spruce forest with *Hylocomium* sp. and *Pleurozium* sp., and alder nearby. Approximate location: 6195538 N, 529723 E.
- T30D 40N – Sampled on July 19, 2003 by Jennifer Harden and Marcy Litvak. In black spruce with alder and *Hylocomium* sp. Located near moss plot at 40 m N.
- T30D 60N – Sampled on July 19, 2003 by Claudia Zimczik and Mariah Carbone. In black spruce with *Hylocomium* sp. and dogwood. Located near moss plot at 60 m N.
- T30D 20W – Sampled on July 19, 2003 by Jennifer Harden. In black spruce with *Hylocomium* sp. and dogwood. Located near moss plot at 20 m W.
- T30D 40W – Sampled on July 19, 2003 by Jennifer Harden and Mariah Carbone. In black spruce with *Hylocomium* sp. and alder. Located near moss plot at 40 m W.
- T30D AgCa 2 – Pit dug at approximately 100 m N.

T30W (1930)

Drive ~45 km past the road to the airport to 6196233 N, 529651 E – the road will be curving off to the left. The trail to the site starts at the top of the hill, inside the grassy area, on the left (south) side of the road. It is well defined within the trees. Trail flagging changes from pink/black to orange within 200 m of where the tower was located. The trail to the wet site veers

off to the left at the solar panels (6195679 N, 529705 E). A second, easier path to the wet site is found if one continues on the path to the dry site (see above) and take the first (?) left possible. Note: the paths to the site align quickly with the transect – don't confuse the two. Paths are solid flagging; striped pink/black indicates a transect. The junction of the L is located at 6195604 N, 529652 E. The north transect for this site goes up the hill towards the dry site and is 100 m long at ~355°. The west transect for this site goes towards the fen and is 100+ m long at ~270°. Moss plots are every 20 m along both transects, although some of the farther moss plots along the north transect were not used.

- T30W 1 - Sampled September 2002 by Jennifer Harden, Greg Winston, and Pascal Cyr. Located near the junction of the two trails to the wet site. Instrumented pit. Approximate location: 6195625 N, 529663 E.
- T30W 20N - Sampled July 20, 2003 by Jennifer Harden and Tamara Basham. Located near the moss plot at 20 m N. In *Sphagnum fuscum* with ledum.
- T30W 40N - Sampled July 20, 2003 by Jennifer Harden and Tamara Basham. Located near the moss plot at 40 m N.
- T30W 20W - Sampled July 20, 2003 by Jennifer Harden and Tamara Basham. Located near the moss plot at 20 m W. *Sphagnum fuscum* (?).
- T30W 40W - Sampled July 20, 2003 by Jennifer Harden and Tamara Basham. Located near the moss plot at 40 m W. In *Pleurozium* sp., although mostly *Hylocomium* sp. in the plot.
- T30W 60W - Sampled July 20, 2003 by Jennifer Harden and Tamara Basham. Located near the moss plot at 60 m W. In *Sphagnum* sp. with other species.
- T30W AgCa 1 – Location unsure, although may be at 6195628 N, 529656 E.

T64W (1964)

Drive ~36 km past the airport road. Sites are located off to the left after you go down a little hill (with gravel at the bottom) and start to go up again (approximately 6197011 N, 538611 E). The path started in a drainage basin cut, going away from the road at 180°, along a well worn, flagged path. A well worn path to the junction of the L (6196657 N, 538633 E), starts just as you enter the lowland, running along the edge of the upland for ~100 m, then turning left. If you continue on the initial path you will pass the locations of the tower (6196678 N, 538585 E), solar tower (6196723 N, 538618 E), a flagged tree marking the end of the east transect, and continue on to the dry (T64D) site. The north transect for this site is 100 m long at ~360°. The east transect for this site is 100 m long at ~90°. Moss plots are every 20 m along both transects.

- T64W 1 - Sampled September 2002 by Jennifer Harden and Greg Winston. Along a *Sphagnum* sp. lawn, 15-20 cm above water track, 15-20 cm below tops of hummocks. Instrumented pit. Approximate location: 6196670 N, 538586 E.
- T64W 0N - Sampled July 15, 2003 by Jennifer Harden. Located near the moss plot at 0 m N, pretty close to the junction of the L.
- T64W 20N - Sampled July 14, 2003 by Jennifer Harden. Located near the moss plot at 20 m N. Black spruce, jack pine, and *Aulacomnium* sp (?) in area.
- T64W 40N - Sampled July 14, 2003 by Jennifer Harden. Located near the moss plot at 40 m N. Black spruce, alder, tamarack, and *Pleurozium* sp. in the area.
- T64W 60N - Sampled July 14, 2003 by Jennifer Harden. Located near the moss plot at 60 m N. Frozen at 32 cm, but not frozen below.
- T64W 80N - Sampled July 14, 2003 by Jennifer Harden. Located near the moss plot at 80 m N. Black spruce, ledum, *Aulacomnium* sp., *Tomenthypnum* sp., and *Sphagnum* sp. in the area

- T64W AgCa 1 – Located outside the L, near the junction. Approximate location likely 6196670 N, 538504 E.

T64D (1964)

Drive ~36 km past the airport road. Sites are located off to the left after you go down a little hill (with gravel at the bottom) and start to go up again (approximately 6197011 N, 538611 E). The path started in a drainage basin cut, going away from the road at 180°, along a well worn, flagged path. A well worn path winds past the wet site (see above) and into the uplands again. Once on dry land the path will fork – veer towards the right (the left fork takes you to Agriculture Canada study sites). At the junction of the L (6196471 N, 538667 E) will be an aspen tree with lots of flagging. The south transect for this site is 100 m long at ~180°. The west transect for this site is 100 m long at ~270°. Moss plots are every 20 m along both transects.

- T64D 1 - Sampled September 2002 by Jennifer Harden. Instrumented pit within black spruce, jack pine, and aspen forest. Approximate location: 6196208 N, 538608 E.
- T64D 20W – Sampled July 18, 2003 by Jennifer Harden.
- T64D 40W – Sampled July 15, 2003 by Jennifer Harden. With *Dicranum* sp.?
- T64D 60W – Sampled July 15, 2003 by Jennifer Harden. With *Pleurozium* sp.
- T64D 80W – Sampled July 15, 2003 by Jennifer Harden.
- T64D 100W – Sampled July 15, 2003 by Jennifer Harden. With pine, aspen, cranberry.
- T64D AgCa 2 – Approximate location likely 6196527 N, 538626 E.

T89D (1989)

Drive ~76 km past the airport road. Turn right into parking area right after you go over a yellow bridge (6195470 N, 503591 E). Walk along dirt road from upper parking lot to the river. Take a left, walking along the river. Cross a creek (6196894 N, 502516 E). After the fork in the river, but before you can see the cabins, take a left onto another road/trail. This trail will go over a hill and veer to the left. Soon after you will take another left to a small trail, which ultimately goes up hill along a cut path (lots of downed trees). This trail will lead you to the solar panel site (6196854 N, 502270 E) and the tower (6196830 N, 502230 E). The transects, at 180° and 270° (no declination used), begin at the tower and are along cut trails.

- T89D 1 - Sampled September 2002 by Sue Trumbore. Instrumented pit within aspen, small black spruce, fire mosses, fireweed. Approximate location: 6196596 N, 502230 E, opposite of south transect.
- T89D 20S – Sampled on July 22, 2003 by Claudia Zimczik. Located at the moss plot at 20 m S.
- T89D 40S – Sampled on July 22, 2003 by Claudia Zimczik. Located at the moss plot at 40 m S.
- T89D 60S – Sampled on July 22, 2003 by Claudia Zimczik. Located at the moss plot at 60 m S.
- T89D 80S – Sampled on July 22, 2003 by Claudia Zimczik. Located at the moss plot at 80 m S.
- T89D 100S – Sampled on July 22, 2003 by Claudia Zimczik. Located at the moss plot at 100 m S.
- T89D AgCa 1 – Likely location 6196900 N, 502289 E.

T81D (1981)

The trail to this site starts at OBS (see above). Walk along the path past the tower. Follow path for ~1 hour, crossing the beaver dam (approximately 6192104 N, 532403 E), until you reach the Univ. of Wisconsin study site (6191072 N, 532382 E). Continue west, following pink/black flagging for ~100 m, to a tree wrapped in flagging (6191063 N, 532288 E). Transects, both 100 m long, are set at 180° and 270°. Transects (both directions) extended into some very wet areas (therefore, woody debris transects within the L are in an unusual formation).

- T81D 1 - Sampled September 15, 2002 by Sue Trumbore. Instrumented pit within jack pine, alder, *Ledum* sp., aspen, cranberry, and patchy moss. Approximate location: 6189367 N, 532285 E.
- T81D AgCa 1 – Likely location 6191065 N, 532285 E.

T95W (1995)

Drive ~210 km past airport road, past the ‘downtown’ of Leaf Rapids. Take a right where the sign says “To South Bay Ferry and South Indian Lake”. Go straight through the stop sign and then drive ~2 km. Park at the “curve ahead” sign (6258250 N, 439800 E). A hundred or so feet up the trail a trail starts in the brush, marked with orange flagging. It quickly crosses a creek (6257883 N, 439724 E) and then continues upland. The trail first arrives at U.W. plots (some trenched areas) and then hits an old fire road (approximately 6257852 N, 439898 E). Continue to follow the trail past the fire road, through another U.W. site, and, now marked by pink/black flagging, up the hill. The flagging may Y at some point, with the right fork taking you to T95W (and the left fork to T95D). Alternatively, turn right on the fire road. After a short distance on the left hand side will be a big brush pile (and a sign on a tree?). If you enter the forest at this point you will arrive at the

end of the north transect. The junction of the L is located at 6257727 N, 439857 E. The north transect is set at 348-350° and is 80 m long so it doesn't hit the fire road. The west transect is at 270° and is 120 m long, almost hitting the fire road.

T95D (1995)

Drive ~210 km past airport road, past the 'downtown' of Leaf Rapids. Take a right where the sign says "To South Bay Ferry and South Indian Lake". Go straight through the stop sign and then drive ~2 km. Park at the "curve ahead" sign (6258250 N, 439800 E). A hundred or so feet up the trail a trail starts in the brush, marked with orange flagging. It quickly crosses a creek (6257883 N, 439724 E) and then continues upland. The trail first arrives at U.W. plots (some trenched areas) and then hits an old fire road (approximately 6257852 N, 439898 E). Continue to follow the trail past the fire road, through another U.W. site, and, now marked by pink/black flagging, up the hill. The flagging may Y at some point, with the left fork taking you to T95D (and the right fork to T95D). The junction of the L is either at 6257427 N, 439869 E or 6257640 N, 439871 E. Transects are set at 220° and 300° (or 315°?).

T98D (1998)

Drive ~210 km past airport road, past Leaf Rapids, the road off to the right to Churchill Lodge. Soon after passing a small pond/lake on the right, park (approximate location 6276754 N, 442657 E). The road will also be curving to the right. Through the brush (alders?) on the left side of the road is a well worn path up the hill to the tower location (6277269 N, 441831 E). The transects begin just southwest of the tower, between it and the solar panels. Transects are set at 230° and 140°.

- T98D 1 - Sampled September 2002 by Jennifer Harden. Instrumented pit within alder, *Equisetum* sp., *Ledum* sp., and fireweed. Located just inside the elbow of the L, in a hummock.
- T98D 20W – Sampled on July 16, 2003 by Jennifer Harden. Located at the moss plot at 20 m W. Within alder, fireweed, and *Ceratodon* sp. On a hummock where organics thickest.
- T98D 40W – Sampled on July 16, 2003 by Jennifer Harden. Located at the moss plot at 40 m W. Within alder and fireweed. No moss.
- T98D 60W - Sampled on July 16, 2003 by Jennifer Harden and Claudia Zimczik. Located at the moss plot at 60 m W. Within alder, baby black spruce, fireweed, *Equisetum* sp., *Ceratodon* sp., *Polytrichum* sp., and grass.
- T98D 80W – Sampled on July 16, 2003 by Jennifer Harden. Located at the moss plot at 80 m W. Within fireweed, *Equisetum* sp., and *Ceratodon* sp.
- T98D 100W – Sampled on July 16, 2003 by Jennifer Harden. Located at the moss plot at 100 m W. Within *Ledum* sp., fireweed, *Ceratodon* sp., and very little *Polytrichum* sp.

T03W (2003)

Thought to be close to T03D (see below). Exact location unknown.

T03D (2003)

Park along the highway near the 1964 sites (approximately 100 m from 6193748 N, 549300 E). There is a flagged trail in from here to the tower location (coordinates unknown).

- T03D 1 – Location unknown, thought to be near T03D 3 & T03D 4.
- T03D 2 – Location unknown, thought to be near T03D 3 & T03D 4.

- T03D 3 – Helicoptered into this area, approximate location is 6194869 N, 549241 E. Within charred black spruce, charred alder, and mostly consumed feathermoss. More severely burned ash areas are located along the trees.
- T03D 4 – Helicoptered into this area, approximate location is 6194869 N, 549241 E. Within charred black spruce, charred alder, and mostly consumed feathermoss. More severely burned ash areas are located along the trees.
- T03D 9 – Location unknown, thought to be near T03D 3 & T03D 4.
- T03D 10 – Location unknown, thought to be near T03D 3 & T03D 4.
- T03D 11 – Location unknown, thought to be near T03D 3 & T03D 4.
- T03D 12 – Location unknown, thought to be near T03D 3 & T03D 4.
- T03D 15 – Located near the tower, 10 m along the west transect, approximately 50 cm inside the L.
- T03D 16 – Located near the tower, 20 m along the west transect, approximately 50 cm inside the L.
- T03D 17 – Located near the tower, 30 m along the west transect, approximately 50 cm inside the L.
- T03D 18 – Located near the tower, 40 m along the west transect, approximately 50 cm inside the L. Lots of needled on the ground. Estimate 1-3 cm of moss burned, based on stems remaining.
- T03D 19 – Located near the tower, 10 m along the north transect, approximately 50 cm inside the L.
- T03D 20 – Located near the tower, 20 m along north transect, approximately 80 cm inside the L. Estimate 1-2 cm of moss burned, based on charred stems remaining.

- T03D 21 – Located near the tower, 30 m along the north transect, approximately 50 cm inside the L.
- T03D 22 – Located near the tower, 40 m along the north transect, approximately 50 cm inside the L. Lots of remaining growth here, especially roses. Trees nearby have 3rd order branches remaining.
- T03D 23 – Located near the tower, ~5 m east of the L, close to 30 m N. In more severely burned area.
- T03D 24 – Located near the tower, 10 m south of the west transect, close to 30 m W. In more severely burned area.